

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (Currently Amended): A pipe segment for transporting a hot particulate material in a carrier gas in a transfer line; which said pipe segment includes:

(a) an outer pipe section;

(b) an inner pipe section defining a passageway for a hot particulate material and a carrier gas, the inner pipe section being positioned within the outer pipe section, and the inner pipe section being formed from or having an inner lining of an abrasion resistant material; and

(c) a support means supporting the inner pipe section in relation to the outer pipe section so that the inner pipe section can expand axially relative to the outer pipe section in response to temperature changes in the material being transported in the pipe segment, the support means including a first support means located at one end of the pipe segment, the first support means including a support member that can receive an end of an inner pipe section of an adjacent pipe segment when the adjacent pipe segment is positioned in use in end to end relationship with the said pipe segment and can allow axial expansion of that inner pipe section relative to the outer pipe section of the said adjacent pipe segment in response to temperature changes in the material being transported in the said adjacent pipe segment, wherein the support member is directly connected only to the outer pipe section of the said pipe segment.

Claim 2 (Previously Presented): A pipe segment according to claim 1, wherein the support member encloses and extends axially from one end of the inner pipe section of the said pipe segment and can receive and enclose the end of the inner pipe section of the adjacent pipe segment when the said adjacent pipe segment is positioned in use in end to end relationship with the said pipe segment and can allow axial expansion of at least that inner pipe section while the ends remain enclosed within the support member.

Claim 3 (Previously Presented): The pipe segment according to claim 1, wherein the support member forms a seal with the ends of the inner pipe sections of the said pipe segment and the said adjacent pipe segment.

Claim 4 (Previously Presented): The pipe segment according to claim 1, wherein the support member includes an inwardly facing cylindrical surface for contacting the outer surfaces of the ends of the inner pipe sections of the said pipe segment and the said adjacent pipe segment.

Claim 5 (Previously Presented): The pipe segment according to claim 1, wherein the support member is in the form of a sleeve having the inwardly facing cylindrical surface.

Claims 6 and 7 (Cancelled).

Claim 8 (Previously Presented): The pipe segment according to claim 1, wherein the first support means also supports the inner pipe section in relation to the outer pipe section.

Claim 9 (Previously Presented): The pipe segment according to claim 1, wherein the first support means defines a barrier to movement of gas axially along the space between the inner and outer pipe sections of the pipe segment.

Claim 10 (Previously Presented): The pipe segment according to claim 9, wherein the first support means includes a frusto-conical barrier member having a larger diameter end that is welded or otherwise connected to the outer pipe section of the said pipe segment and a smaller diameter end that is welded or otherwise connected to the support member.

Claim 11 (Previously Presented): The pipe segment according to claim 10, wherein the frusto-conical barrier member is arranged so that the larger diameter end is located at the end of the outer pipe section and the smaller diameter end is located inwardly of the end of the inner pipe segment.

Claim 12 (Previously Presented): The pipe segment according to claim 1, wherein the support means includes a second support means positioned at a location along the length of the pipe segment between the ends of the pipe segment and it supports the inner pipe section in relation to the outer pipe section for axial expansion relative to the outer pipe section.

Claim 13 (Previously Presented): The pipe segment according to claim 12, wherein the second support means also supports the inner pipe section in relation to the outer pipe section so that the inner pipe section can expand radially relative to the outer pipe section.

Claim 14 (Previously Presented): The pipe segment according to claim 12, wherein the second support means is welded or otherwise connected to the outer pipe section and the inner pipe section.

Claim 15 (Previously Presented): The pipe segment according to claim 12, wherein the second support means is welded or otherwise connected to the outer pipe section only.

Claim 16 (Previously Presented): The pipe segment according to claim 12, wherein the second support means is welded or otherwise connected to the inner pipe section only.

Claim 17 (Previously Presented): The pipe segment according to claim 12, wherein the second support means functions as a spring that provides a resistance to radial expansion of the inner pipe section relative to the outer pipe section.

Claim 18 (Previously Presented): The pipe segment according to claim 12, wherein the second support means is in the form of a plurality of rods, each of which is bent so as to function as a spring, that are positioned at spaced intervals around the circumference of the inner and outer pipe sections at a location along the length of the pipe segment.

Claim 19 (Previously Presented): The pipe segment according to claim 12, wherein the abrasion resistant material of the inner pipe section is a cast iron.

Claim 20 (Previously Presented): The pipe segment according to claim 19, wherein the inner pipe section is made of an wear-resistant and/or abrasion resistant material.

Claim 21 (Previously Presented): The pipe segment according to claim 12, wherein the outer pipe section is formed from a steel.

Claim 22 (Previously Presented): The pipe segment according to claim 12, wherein the pipe segment further includes thermal insulation in the space between the inner and outer pipe sections.

Claim 23 (Previously Presented): A transfer line for transporting hot particulate material in a carrier gas, which transfer line includes a plurality of pipe segments according to claim 1.

Claim 24 (Previously Presented): The transfer line according to claim 23, wherein the plurality of pipe segments are positioned in an end to end relationship with the ends of adjacent outer pipe sections welded or otherwise connected together, and the end of one of each pair of adjacent inner pipe sections extending into and engaging the support member of the other of the pair of adjacent inner pipe sections.

Claims 25-29 (Cancelled).

Claim 30 (New): A pipe segment for transporting a hot particulate material in a carrier gas in a transfer line, which said pipe segment includes:

(a) an outer pipe section;

(b) an inner pipe section defining a passageway for a hot particulate material and a carrier gas, the inner pipe section being positioned within the outer pipe section, and the inner pipe section being formed from or having an inner lining of an abrasion resistant material; and

(c) a support means supporting the inner pipe section in relation to the outer pipe section so that the inner pipe section can expand axially relative to the outer pipe section in response to temperature changes in the material being transported in the pipe segment, the support means including a first support means located at one end of the pipe segment, the first support means including a support member that can receive an end of an inner pipe section of an adjacent pipe segment when the adjacent pipe segment is positioned in use in end to end relationship with the said pipe segment and can allow axial expansion of that inner pipe section relative to the outer pipe section of the said adjacent pipe segment in response to temperature changes in the material being transported in the said adjacent pipe segment, wherein the support member is directly connected to both the outer pipe section and the inner pipe section so that the end of the inner pipe section, but not the remainder of the inner pipe section, is constrained from axial expansion relative to the outer pipe section at that end of the pipe segment.

Claim 31 (New): A pipe segment for transporting a hot particulate material in a carrier gas in a transfer line, which said pipe segment includes:

(a) an outer pipe section;

(b) an inner pipe section defining a passageway for a hot particulate material and a carrier gas, the inner pipe section being positioned within the outer pipe section, and the inner pipe section being formed from or having an inner lining of an abrasion resistant material; and

(c) a support means supporting the inner pipe section in relation to the outer pipe section so that the inner pipe section can expand axially relative to the outer pipe section in response to temperature changes in the material being transported in the pipe segment, the support means including a first support means located at one end of the pipe segment, the first support means including a support member that can receive an end of an inner pipe section of an adjacent pipe segment when the adjacent pipe segment is positioned in use in end to end relationship with the said pipe segment and can allow axial expansion of that inner pipe section relative to the outer pipe section of the said adjacent pipe segment in response to temperature changes in the material being transported in the said adjacent pipe segment, wherein the first support means defines a barrier to movement of gas axially along the space between the inner and outer pipe sections of the pipe segment and includes a frusto-conical barrier member having a larger diameter end that is welded or otherwise connected to the outer pipe section of the said pipe segment and a smaller diameter end that is welded or otherwise connected to the support member;

Claim 32 (New): A pipe segment for transporting a hot particulate material in a carrier gas in a transfer line, which said pipe segment includes:

(a) an outer pipe section;

(b) an inner pipe section defining a passageway for a hot particulate material and a carrier gas, the inner pipe section being positioned within the outer pipe section, and the inner pipe section being formed from or having an inner lining of an abrasion resistant material; and

(c) a support means supporting the inner pipe section in relation to the outer pipe section so that the inner pipe section can expand axially relative to the outer pipe section in response to temperature changes in the material being transported in the pipe segment, the support means including a first support means located at one end of the pipe segment, the first support means including a support member that can receive an end of an inner pipe section of an adjacent pipe segment when the adjacent pipe segment is positioned in use in end to end relationship with the said pipe segment and can allow axial expansion of that inner pipe

section relative to the outer pipe section of the said adjacent pipe segment in response to temperature changes in the material being transported in the said adjacent pipe segment, the support means including a second support means positioned at a location along the length of the pipe segment between the ends of the pipe segment and supporting the inner pipe section in relation to the outer pipe section for axial expansion relative to the outer pipe section.